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SEQUENCE LISTING

(1) GENERAL INFORMATION:

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(ii) TITLE OF INVENTION: Diabetes-Mediating Proteins and Therapeutic Uses Thereof

(iii) NUMBER OF SEQUENCES: 10

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(v) COMPUTER READABLE FORM:

(A) MEDIUM TYPE: Floppy disk
(B) COMPUTER: IBM PC compatible
(C) OPERATING SYSTEM: PC-DOS/MS-DOS
(D) SOFTWARE: PatentIn Release #1.0, Version #1.25 (EPO)

(vi) CURRENT APPLICATION DATA:

(A) APPLICATION NUMBER: to be assigned
(B) FILING DATE: 24-OCT-1997
(C) CLASSIFICATION:

(vii) PRIOR APPLICATION DATA:

(A) APPLICATION NUMBER: 08/897,098
(B) FILING DATE: 18-JULY-1997
(C) CLASSIFICATION:

(vii) PRIOR APPLICATION DATA:

(A) APPLICATION NUMBER: 60/029,324
(B) FILING DATE: 25-OCT-1996

(vii) PRIOR APPLICATION DATA:

(A) APPLICATION NUMBER: 60/030,088
(B) FILING DATE: 05-NOV-1996

(vii) PRIOR APPLICATION DATA:

(A) APPLICATION NUMBER: 60/030,186
(B) FILING DATE: 05-NOV-1996

(ix) TELECOMMUNICATION INFORMATION:

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(2) INFORMATION FOR SEQ ID NO:1:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 611 amino acids
(B) TYPE: amino acid
(C) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1:

09297040-07499

Met Ile Ser Ala Ser Arg Ala Ala Ala Ala Arg Leu Val Gly Thr Ala
5 10 15

Ala Ser Arg Ser Pro Ala Ala Ala Arg Pro Gln Asp Gly Trp Asn Gly
20 25 30

Leu Ser His Glu Ala Phe Arg Phe Val Ser Arg Asp Tyr Ala Ser Glu
35 40 45

Ala Ile Lys Gly Ala Val Val Gly Ile Asp Leu Gly Thr Thr Asn Ser
50 55 60

Cys Val Ala Val Met Glu Gly Lys Gln Ala Lys Val Leu Glu Asn Ala
65 70 75 80

Glu Gly Ala Arg Thr Thr Pro Ser Val Val Ala Phe Thr Ala Asp Gly
85 90 95

Glu Arg Leu Val Met Pro Ala Lys Arg Gln Ala Val Thr Asn Pro Asn
100 105 110

Asn Thr Phe Tyr Ala Thr Lys Arg Leu Ile Gly Arg Arg Tyr Asp Asp
115 120 125

Pro Glu Val Gln Lys Asp Thr Lys Asn Val Pro Phe Lys Ile Val Arg
130 135 140

Ala Ser Asn Gly Asp Ala Trp Val Glu Ala His Gly Lys Tyr Ser Pro
145 150 155 160

Ser Gln Ile Gly Ala Phe Val Leu Met Lys Met Lys Glu Thr Ala Glu
165 170 175

Asn Tyr Leu Gly His Thr Ala Lys Asn Ala Val Ile Thr Val Pro Ala
180 185 190

Tyr Phe Asn Asp Ser Gln Arg Gln Ala Thr Lys Asp Ala Gly Gln Ile
195 200 205

Ser Gly Leu Asn Val Leu Val Ile Asn Glu Pro Thr Ala Ala Ala Leu
210 215 220

Ala Tyr Gly Leu Asp Lys Ser Glu Asp Lys Val Ile Ala Val Tyr Asp
225 230 235 240

Leu Gly Gly Gly Thr Phe Asp Ile Ser Ile Leu Glu Ile Gln Lys Gly
245 250 255

Val Phe Glu Val Lys Ser Thr Asn Gly Asp Thr Phe Leu Gly Gly Asp
260 265 270

Phe Asp Gln Ala Leu Leu Arg His Ile Val Lys Glu Phe Lys Arg Glu
275 280 285

Thr Gly Val Asp Leu Thr Lys Asp Asn Met Ala Leu Gln Arg Val Arg
290 295 300

Glu Ala Ala Glu Lys Ala Lys Cys Glu Leu Ser Ser Ser Val Gln Thr
305 310 315 320

Asp Ile Asn Leu Pro Tyr Leu Thr Asp Ala Ser Gly Pro Lys His Leu
325 330 335

Asn Met Lys Leu Thr Arg Ala Gln Phe Glu Gly Ile Val Thr Asp Leu
340 345 350

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Ile Lys Arg Thr Ile Ala Pro Cys Gln Lys Ala Met Gln Asp Ala Glu
355 360 365

Val Ser Lys Ser Asp Ile Gly Glu Val Ile Leu Val Gly Gly Met Thr
370 375 380

Arg Pro Lys Val Gln Gln Thr Val Gln Asp Leu Phe Gly Arg Ala Pro
385 390 395 400

Ser Lys Ala Val Asn Pro Glu Asp Ala Val Ala Ile Gly Ala Ala Ile
405 410 415

Gln Gly Gly Val Leu Ala Gly Asp Val Thr Asp Val Leu Leu Leu Asp
420 425 430

Val Thr Pro Leu Ser Leu Gly Ile Glu Thr Pro Pro Ala Pro Arg Gly
435 440 445

Val Pro Gln Ile Glu Val Thr Phe Asp Ile Asp Ala Asn Gly Ile Val
450 455 460

His Val Ser Ala Lys Asp Lys Gly Thr Gly Arg Glu Gln Gln Ile Val
465 470 475 480

Ile Gln Ser Ser Gly Gly Leu Ser Lys Asp Asp Ile Glu Asn Met Val
485 490 495

Lys Asn Ala Lys Tyr Ala Glu Glu Asp Arg Arg Lys Lys Glu Arg Val
500 505 510

Glu Ala Val Asn Met Ala Glu Gly Ile Ile His Asp Thr Glu Thr Lys
515 520 525

Met Glu Glu Phe Lys Asp Gln Leu Pro Ala Asp Glu Cys Asn Lys Leu
530 535 540

Lys Glu Glu Ile Ser Lys Val Arg Ala Leu Leu Ala Lys Asp Ser Glu
545 550 555 560

Thr Gly Glu Asn Ile Arg Gln Ala Ala Ser Ser Leu Gln Gln Ala Ser
565 570 575

Leu Lys Leu Phe Glu Met Ala Tyr Lys Lys Met Ala Ser Glu Arg Glu
580 585 590

Gly Ser Gly Ser Ser Gly Thr Gly Glu Gln Lys Glu Asp Gln Lys Glu
595 600 605

Glu Lys Gln
610

(2) INFORMATION FOR SEQ ID NO: 2:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 611 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 2:

Met Ile Ser Ala Ser Arg Ala Ala Ala Ala Arg Leu Val Gly Ala Ala
5 10 15

Ala Ser Arg Gly Pro Thr Ala Ala Arg His Gln Asp Ser Trp Asn Gly
20 25 30

Leu Ser His Glu Ala Phe Arg Leu Val Ser Arg Asp Tyr Ala Ser Glu
35 40 45

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Ala Ile Lys Gly Ala Val Val Gly Ile Asp Leu Gly Thr Thr Asn Ser
50 55 60

Cys Val Ala Val Met Glu Gly Lys Gln Ala Lys Val Leu Glu Asn Ala
65 70 75 80

Glu Gly Ala Arg Thr Thr Pro Ser Val Val Ala Phe Thr Ala Asp Gly
85 90 95

Glu Arg Leu Val Met Pro Ala Lys Arg Gln Ala Val Thr Asn Pro Asn
100 105 110

Asn Thr Phe Tyr Ala Thr Lys Arg Leu Ile Gly Arg Arg Tyr Asp Asp
115 120 125

Pro Glu Val Gln Lys Asp Ile Lys Asn Val Pro Phe Lys Ile Val Arg
130 135 140

Ala Ser Asn Gly Asp Ala Trp Val Glu Ala His Gly Lys Tyr Ser Pro
145 150 155 160

Ser Gln Ile Gly Ala Phe Val Leu Met Lys Met Lys Glu Thr Ala Glu
165 170 175

Asn Tyr Leu Gly His Thr Ala Lys Asn Ala Val Ile Thr Val Pro Ala
180 185 190

Tyr Phe Asn Asp Ser Gln Arg Gln Ala Thr Lys Asp Ala Gly Gln Ile
195 200 205

Ser Gly Leu Asn Val Leu Val Ile Asn Glu Pro Thr Ala Ala Ala Leu
210 215 220

Ala Tyr Gly Leu Asp Lys Ser Glu Asp Lys Val Ile Ala Val Tyr Asp
225 230 235 240

Leu Gly Gly Gly Thr Phe Asp Ile Ser Ile Leu Glu Ile Gln Lys Gly
245 250 255

Val Phe Glu Val Lys Ser Thr Asn Gly Asp Thr Phe Leu Gly Gly Asp
260 265 270

Phe Asp Gln Ala Leu Leu Arg His Ile Val Lys Glu Phe Lys Arg Glu
275 280 285

Thr Gly Val Asp Leu Thr Lys Asp Asn Met Ala Leu Gln Arg Val Arg
290 295 300

Glu Ala Ala Glu Lys Ala Lys Cys Glu Leu Ser Ser Ser Val Gln Thr
305 310 315 320

Asp Ile Asn Leu Pro Tyr Leu Thr Asp Ser Ser Gly Pro Lys His Leu
325 330 335

Asn Met Lys Leu Thr Arg Ala Gln Phe Glu Gly Ile Val Thr Asp Leu
340 345 350

Ile Arg Arg Thr Ile Ala Pro Cys Gln Lys Ala Met Gln Asp Ala Glu
355 360 365

Val Ser Lys Ser Asp Ile Gly Glu Val Ile Leu Val Gly Gly Met Thr
370 375 380

Arg Pro Lys Val Gln Gln Thr Val Gln Asp Leu Phe Gly Arg Ala Pro
385 390 395 400

Ser Lys Ala Val Asn Pro Glu Asp Ala Val Ala Ile Gly Ala Ala Ile
405 410 415

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Gln Gly Gly Val Leu Ala Gly Asp Val Thr Asp Val Leu Leu Leu Asp
 420 425 430
 Val Thr Pro Leu Ser Leu Gly Ile Glu Thr Pro Pro Ala Pro Arg Gly
 435 440 445
 Val Pro Gln Ile Glu Val Thr Phe Asp Ile Asp Ala Asn Gly Ile Val
 450 455 460
 His Val Ser Ala Lys Asp Lys Gly Thr Arg Arg Glu Gln Gln Ile Val
 465 470 475 480
 Ile Gln Ser Ser Gly Gly Leu Ser Lys Asp Asp Ile Glu Asn Met Val
 485 490 495
 Lys Asn Ala Lys Tyr Ala Glu Glu Asp Arg Arg Lys Lys Glu Arg Val
 500 505 510
 Glu Ala Val Asn Met Ala Glu Gly Ile Ile His Asp Thr Glu Thr Lys
 515 520 525
 Met Glu Glu Phe Lys Asp Gln Leu Pro Ala Asp Glu Cys Asn Lys Leu
 530 535 540
 Lys Glu Glu Ile Ser Lys Met Arg Glu Leu Leu Ala Lys Asp Ser Glu
 545 550 555 560
 Thr Gly Glu Asn Ile Arg Gln Ala Ala Ser Ser Leu Gln Gln Ala Ser
 565 570 575
 Leu Lys Leu Phe Glu Met Ala Tyr Lys Lys Met Ala Ser Glu Arg Glu
 580 585 590
 Gly Ser Gly Ser Ser Gly Thr Gly Glu Gln Lys Glu Asp Gln Lys Glu
 595 600 605
 Glu Lys Gln
 610

(2) INFORMATION FOR SEQ ID NO: 3:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 253 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 3:

Met Ala Asp Gly Phe Ser Leu Asn Asp Ala Leu Ala Gly Ser Gly Asn
 5 10 15
 Pro Asn Pro Arg Gly Trp Pro Gly Ala Trp Gly Asn Gln Pro Gly Ala
 20 25 30
 Gly Gly Tyr Pro Gly Ala Ser Tyr Pro Gly Ala Pro Gly Gln Ala Pro
 35 40 45
 Pro Gly Gly Tyr Pro Gly Gln Ala Pro Pro Ser Ala Tyr Pro Gly Pro
 50 55 60
 Thr Gly Pro Ser Ala Tyr Pro Gly Pro Thr Ala Pro Gly Ala Tyr Pro
 65 70 75 80
 Gly Pro Thr Ala Pro Gly Ala Phe Pro Gly Gln Pro Gly Gly Pro Gly
 85 90 95
 Ala Tyr Pro Ser Pro Gly Ala Tyr Pro Ser Ala Pro Gly Ala Tyr Pro
 100 105 110

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Ala Thr Gly Pro Phe Gly Ala Pro Thr Gly Pro Leu Thr Val Pro Tyr
 115 120 125

Asp Met Pro Leu Pro Gly Gly Val Met Pro Arg Met Leu Ile Thr Ile
 125 130 135

Ile Gly Thr Val Lys Pro Asn Ala Asn Ser Ile Thr Leu Phe Lys Lys
 140 145 150 155

Gly Asn Asp Ile Ala Phe His Phe Asn Pro Arg Phe Asn Glu Asn Asn
 160 165 170

Arg Arg Val Ile Val Cys Asn Thr Lys Gln Asp Asn Asn Trp Gly Arg
 175 180 185

Glu Glu Arg Gln Ser Ala Phe Pro Phe Glu Ser Gly Lys Pro Phe Lys
 190 195 200

Ile Gln Val Leu Val Glu Asp His Phe Lys Val Ala Val Asn Asp Val
 205 210 215

His Leu Leu Gln Tyr Asn His Arg Met Lys Asn Leu Arg Glu Ile Ser
 220 225 230 235

Gln Leu Gly Ile Ile Gly Asp Ile Thr Leu Thr Ser Ala Ser His Ala
 240 245 250

Met Ile

(2) INFORMATION FOR SEQ ID NO:4:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 246 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:4:

Met Ala Asp Asn Phe Ser Leu His Asp Ala Leu Ser Gly Ser Gly Asn
 5 10 15

Pro Asn Pro Gln Gly Trp Pro Gly Ala Trp Gly Asn Gln Pro Ala Gly
 20 25 30

Ala Gly Gly Tyr Pro Gly Ala Ser Tyr Pro Gly Tyr Pro Gly Gln Ala
 35 40 45

Pro Pro Gly Ala Tyr Pro Gly Gln Ala Pro Pro Gly Ala Tyr His Gly
 50 55 60

Ala Pro Gly Ala Tyr Pro Gly Ala Pro Ala Pro Gly Val Tyr Pro Gly
 65 70 75 80

Pro Pro Ser Gly Pro Gly Ala Tyr Pro Ser Ser Gly Gln Pro Ser Ala
 85 90 95

Pro Gly Ala Tyr Ala Thr Gly Pro Tyr Gly Ala Pro Ala Gly Pro Leu
 100 105 110

Ile Val Pro Tyr Asn Leu Pro Leu Pro Gly Gly Val Val Pro Arg Met
 115 120 125

Leu Ile Thr Ile Leu Gly Thr Val Lys Pro Asn Ala Asn Arg Ile Ala
 130 135 140

Leu Asp Phe Gln Arg Gly Asn Asp Val Ala Phe His Phe Pro Arg Phe
 145 150 155 160

Asn Glu Asn Asn Arg Arg Val Ile Val Cys Asn Thr Lys Leu Asp Asn

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165

170

175

Asn Trp Gly Arg Glu Glu Arg Gln Ser Val Phe Pro Phe Glu Ser Gly
 180 185 190

Lys Pro Phe Lys Ile Gln Val Leu Val Glu Pro Asp His Phe Lys Val
 195 200 205

Ala Val Asn Asp Ala His Leu Gln Tyr Asn His Arg Val Lys Lys Leu
 210 215 220

Asn Glu Ile Ser Lys Leu Gly Ile Ser Gly Asp Ile Asp Leu Thr Ser
 225 230 235 240

Ala Ser Tyr Thr Met Ile
 245

- (2) INFORMATION FOR SEQ ID NO:5:
- (A) LENGTH: 12 amino acids
 - (B) TYPE: amino acid
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: protein
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:5:

Ala Gln Tyr Glu Glu Leu Ile Ala Asn Gly Asp Met
 5 10

- (2) INFORMATION FOR SEQ ID NO:6:
- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 10 amino acids
 - (B) TYPE: amino acid
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: protein
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:6:

Lys Lys Pro Leu Val Tyr Asp Glu Gly Lys
 5 10

- (2) INFORMATION FOR SEQ ID NO:7:
- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 9 amino acids
 - (B) TYPE: amino acid
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: protein
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:7:

Leu Leu Glu Xaa Thr Xaa Xaa Leu Xaa
 5

- (2) INFORMATION FOR SEQ ID NO:8:
- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 8 amino acids
 - (B) TYPE: amino acid
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: protein
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:8:

Pro Ser Leu Asn Ser Xaa Glu Xaa
 5

- (2) INFORMATION FOR SEQ ID NO:9:
- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 7 amino acids
 - (B) TYPE: amino acid
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: protein
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:9:

09257040.072199

Ile Glu Leu Xaa Glu Ile Xaa
5

(2) INFORMATION FOR SEQ ID NO:10:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 14 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:10:

Pro Glu Ala Ile Lys Gly Ala Val Val Gly Ile Asp Leu Gly
5 10

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667220" 04046260